Applying our GRID framework for CDF computing

Santander HEP Group
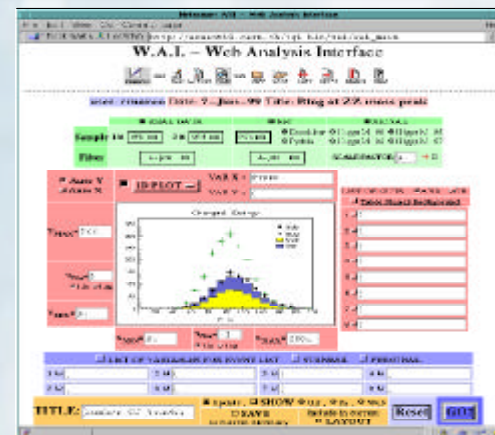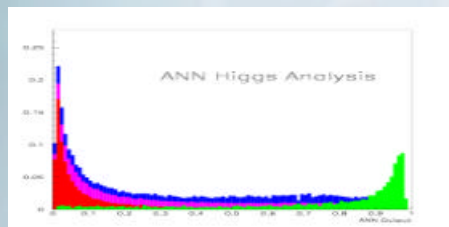
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ICRB Meeting
24 January 2002

Our Computing Experience

- **On-line and offline software at LEP (DELPHI):**
  - **Fast Simulation**
  - **Physics Analysis Software:**
    - Hot-line Interactive Event Search (IES)
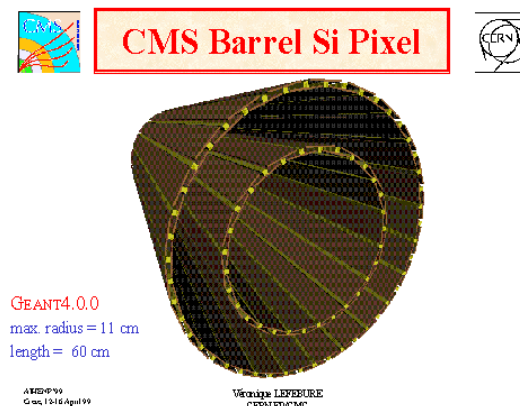   - NN analysis (LEP200 Higgs 4jets)

- **OO software for CMS:**
  - **OSCAR framework (including Objectivity use)**
  - **Geant4 physics processes**
  - **Alignment**
- **Recent: O/R DBMS**
  - **Objective: alternative framework to ODMG (Objectivity)**
  - **IBM DMS: beta IDS9.3 + Object Translator**
  - **Also with Oracle 9i**
    - D.Rodriguez at CERN IT

CMS Barrel Si Pixel

Geant4.0.0
max. radius = 11 cm
length = 60 cm

GRID activities

- **IFCA Santander present in EU-DataGRID**
  - **Participation in testbed (WP6):**
    - **CA provider for SPAIN**
    - **Initial cluster with 5 nodes (testbed 0)**
    - **Team setup (~5 people) + experience with Globus + DataGRID kits, etc.**
- **Main partner for new (EU) project: CROSSGRID**
  - **Starting 1st March, driven by Poland+Spain+Germany**
  - **Use of distributed O/R DBMS**
  - **Data-mining: distributed NN (via MPI)**
  - **Santander also responsible for testbed (WP4) distributed over the Geant network across 11 european countries**

  NEW Resources (hardware + personnel)

Development of
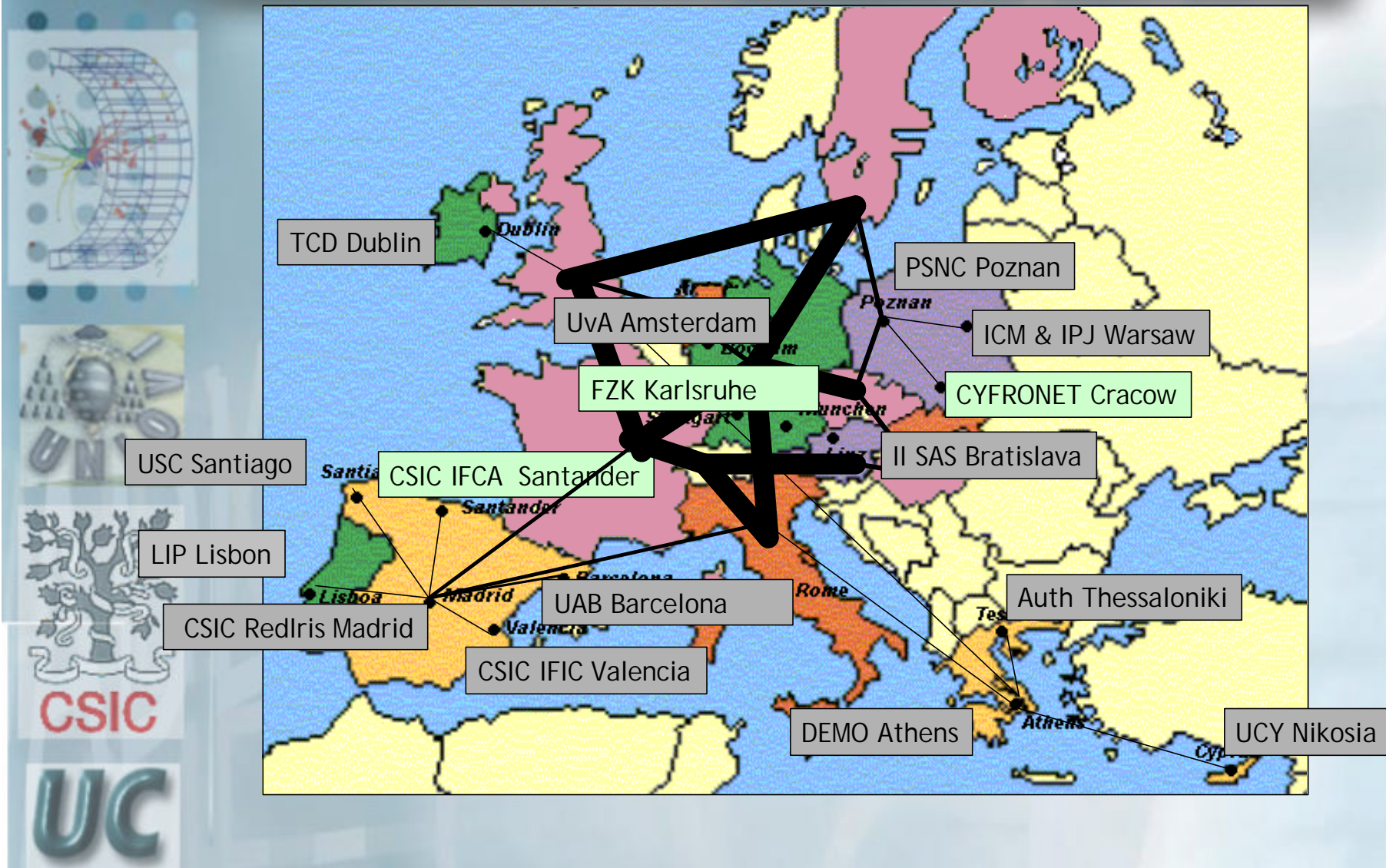# GRID environment for
interactive applications

J.Marco (CSIC)

24-I-2002   GGF3 (Frascati,Rome) 9-X-2001

CROSSGRID testbed

Resources

- ## New Infraestructure:
  - ### Cluster ~100 IBM servers *(~50% available for HEP)*
    - (dual 1.26 GHz, 640Mb-4GB RAM, 80 GB/server)
    - + 4-way processor gatekeeper
  - ### Gigabit local backbone
  - ### Improved network connection:
    - 155-622 Mbps Santander-Geant
    - 2.5 Gbps into-Geant and to USA
- ## Personnel (for whole HEP activity, CDF + CMS):
  - ### 2 Grid "experts" + support from university computing architecture team
  - ### 2 DBMS "experts"
  - ### Several seniors with experience in HEP offline software (installation and processing)

Perspectives

- **Now planning our activity in CDF computing issues for next 3 years**

- **Interested in GRID framework** (sinergy for activity, infraestructure, personnel with DataGRID,CROSSGRID and also activity in CMS)

- **Considering mixed model:**

  (trying to optimize funding possibilities/analysis objectives):

  - **Resources at FNAL:**
    - **Disk on-line + CPU (basically for people at FNAL)**
  - **Resources at Santander:**
    - **50% of current server cluster operated in GRID framework**
    - **Dedicated on-line disk + additional computing nodes**

- **Extremely interested in coordination with UK**(GridPP) **and Karlsruhe** (FZK participant in CROSSGRID) +...